A. CLASSIFICATION OF SUBJECT MATTER IPC 7 F16J15/34 F16L23/032

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 F16J F16L

Documentation searched other than minimum documentation to the extent that such documents are included. In the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 37 00 125 A (SCHULZ & CO KG)	1-12
	11 May 1988 (1988-05-11)	12.15
Υ	the whole document	13–15
X	DE 28 53 722 A (SCHULZ WILHELM)	1-11
_	26 June 1980 (1980-06-26)	12-15
Α	the whole document	12 13
X	DE 28 38 514 A (SCHULZ WILHELM)	1-11
•	20 March 1980 (1980-03-20)	12-15
Α	claims 1-12; figures 1-3	12 13
X	DE 78 26 242 U (SCHULZ, W.)	1-11
	10 April 1980 (1980-04-10)	
	page 7, paragraphs 3,4; figures 1-3; examples 1-3	1
	examples 1-3	
	-/	

<u> </u>	
Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents: A' document defining the general state of the art which is not considered to be of particular relevance E' earlier document but published on or after the International filling date L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O' document referring to an oral disclosure, use, exhibition or other means P' document published prior to the international filling date but later than the priority date claimed	 "T" tater document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
5 September 2003	18/09/2003
Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Staengl, G

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	Ition) DOCUMENTS CONSIDERED TO BE RELEVANT		Dalament to alsies No.
Category °	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.
Х	DE 837 345 C (ADALBERT KOSIK) 28 April 1952 (1952-04-28)		1
A	page 2, line 18-101		2-15
X	DE 858 915 C (ADALBERT KOSIK KELHEIM) 11 December 1952 (1952-12-11)		1
Α	page 1, line 17 -page 2, line 120		2-15
Y	US 6 210 107 B1 (HOSANNA RICHARD ET AL) 3 April 2001 (2001-04-03) figures 1-4		13–15
Y	US 5 217 234 A (HORNSBY JOHN) 8 June 1993 (1993-06-08) figures 1-10		13-15
A	US 4 484 771 A (SCHULZ WILHELM) 27 November 1984 (1984-11-27) column 5, line 4 -column 6, line 53		1-15
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SUBSTITUTE SHEET (RULE 26)

1	Application No
Per/GB	03/02688

				1	05/02005
Patent document cited in search report		Publication date		Patent family member(s)	Publication date
DE 3700125	Α	11-05-1988	DE	3700125 A1	11-05-1988
DE 2853722	Α	26-06-1980	DE	2853722 A1	26-06-1980
DE 2838514	Α	20-03-1980	DE	2838514 A1	20-03-1980
DE 7826242	U	10-04-1980	DE	7826242 U1	10-04-1980
DE 837345	С	28-04-1952	NONE		
DE 858915	С	11-12-1952	NONE		
US 6210107	B1	03-04-2001	US AT AU BR CA CN DE DE JP ZA	5249812 A 134029 T 637462 B2 7262891 A 9100980 A 2037966 A1 1056925 A ,B 69116906 D1 69116906 T2 0447898 A2 910764 A1 5033871 A 9101769 A	05-10-1993 15-02-1996 27-05-1993 12-09-1991 05-11-1991 13-09-1991 21-03-1996 20-06-1996 25-09-1991 25-09-1991 09-02-1993 24-12-1991
US 5217234	Α	08-06-1993	NONE		
US 4484771	A	27-11-1984	EP DE	0054574 A1 3068475 D1	30-06-1982 09-08-1984